

**AMENDMENTS TO THE CLAIMS**

**This listing of claims will replace all prior versions and listings of claims in the application:**

**LISTING OF CLAIMS:**

1. (previously amended): An O<sub>2</sub>-sensor fault diagnosis apparatus comprising:  
  
an O<sub>2</sub>-sensor for detecting concentration of oxygen contained in an exhaust gas of an internal combustion engine;  
  
a feedback control portion for controlling a quantity of fuel supplied to the internal combustion engine through feedback control according to an output signal of the O<sub>2</sub>-sensor;  
  
a state judging portion for judging whether the O<sub>2</sub>-sensor is in an active state or in an inactive state on the basis of a voltage of the output signal of the O<sub>2</sub>-sensor; and  
  
a fault diagnosis portion for diagnosing whether the O<sub>2</sub>-sensor has any fault on the basis of the voltage of the output signal of the O<sub>2</sub>-sensor under a condition where it is judged that the O<sub>2</sub>-sensor is in the inactive state, wherein fuel is not injected when the O<sub>2</sub>-sensor is in the inactive state,  
  
wherein said fault diagnosis portion includes an input resistance changing portion for changing an input resistance so as to cause a change in a level of the output signal of said O<sub>2</sub>-sensor, and identifies a fault of said O<sub>2</sub>-sensor on the basis of the change in the level of the output signal caused by changing the input resistance, and  
  
wherein said fault diagnosis portion diagnoses whether said O<sub>2</sub>-sensor has any fault by changing said input resistance each time said state judging portion judges that said O<sub>2</sub>-sensor is in the inactive state.
- 2-3. (canceled).

4. (original): The O<sub>2</sub>-sensor fault diagnosis apparatus according to Claim 1 further comprising an informing portion for sending a notice if said fault diagnosis portion diagnoses that said O<sub>2</sub>-sensor has a fault.

5. (currently amended): An O<sub>2</sub>-sensor fault diagnosis method comprising the steps of:

judging whether an O<sub>2</sub>-sensor is in an active state or in an inactive state on the basis of a voltage of an output signal of the O<sub>2</sub>-sensor; and

diagnosing whether the O<sub>2</sub>-sensor has any fault on the basis of the voltage of the output signal of the O<sub>2</sub>-sensor under a condition where it is judged that the O<sub>2</sub>-sensor is in the inactive state, wherein fuel is not injected when the O<sub>2</sub>-sensor is in the inactive state; and

changing a level of the output signal of the O<sub>2</sub>-sensor by changing an input resistance, wherein in said diagnosing step, a fault of the O<sub>2</sub>-sensor is identified on the basis of a change in a level of the output signal of the O<sub>2</sub>-sensor, and

wherein in said diagnosing step, it is diagnosed whether the O<sub>2</sub>-sensor has any fault by changing said input resistance each time it is judged in the judging step that the O<sub>2</sub>-sensor is in the inactive state.

6-7. (canceled).

8. (previously presented): The O<sub>2</sub>-sensor fault diagnosis method according to Claim 5 further comprising an informing step for sending a notice if the O<sub>2</sub>-sensor is diagnosed to have a fault in said diagnosing step.

9. (previously presented): The method according to claim 5, wherein the O<sub>2</sub>-sensor is operable to detect a concentration of oxygen contained in an exhaust gas of an internal combustion engine.

10. (previously presented): The apparatus according to claim 2, wherein said fault diagnosis portion calculates a timing at which the input resistance is changed, and changes the input resistance for a predetermined period of time.

---